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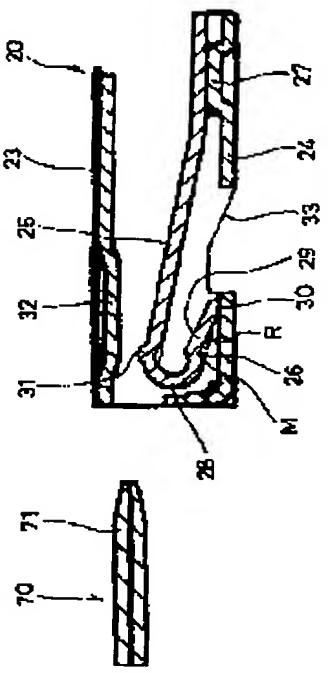
(54) FEMALE SIDE TERMINAL METAL PIECE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a female side terminal metal piece equipped with a resilient contacting piece exerting an appropriate contacting pressure to a male side terminal metal piece.
SOLUTION: A leg 29 has a recessed shape separating from the bottom wall 24 as a whole compared with a virtual tangent M drawn from an abutting part 30 to a folded-back part 28, which secures an inclining angle R of the leg 29 to the bottom wall 24. Even in the case a resilient contacting piece 25 is depressed by insertion of a tab 71, it is possible to avoid contacting of the region ahead of the abutting part 30 of the leg 29 with the bottom wall 24, so that the deflecting fulcrum does not make movement from the abutting part 30. This allows preventing the contacting pressure of the piece 25 with the tab 71 from becoming excessive resulting from fulcrum shift.



LEGAL STATUS

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CLAIMS

[Claim(s)]
[Claim 1] In the cylinder part in which male side edge child metallic ornaments are inserted from the front The clinch section which **** to an arc below after using as the 1st supporting point the end face fixed to the bottom wall of this cylinder part and extending toward the slanting front from there is prepared. And are the direction of return from that clinch section, and while the leg extends aslant towards said bottom wall, the elastic contact segment in which it comes to form the contact section from which the tip of this leg serves as the 2nd supporting point in contact with a bottom wall is prepared. When said male side edge child metallic ornaments are inserted into said cylinder part and said elastic contact segment is depressed The female side edge child metallic ornaments by which it is the female side edge child metallic ornaments which bend and deform this elastic contact segment focusing on said 1st and 2nd supporting point, and the field which stands in a row in said contact section in said leg uses said contact section as an end, and is characterized by considering as the depression configuration estranged from said bottom wall.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The sectional view showing the male connector of this operation gestalt
[Drawing 2] The sectional view showing the condition of having built female side edge child metallic ornaments into female connector housing
[Drawing 3] The partial expanded sectional view showing female side edge child metallic ornaments

[Drawing 4] The partial expanded sectional view showing the condition of having connected male side edge child metallic ornaments to female side edge child metallic ornaments
[Drawing 5] The sectional view showing the condition of having fitted in male and female connectors
[Drawing 6] The partial expanded sectional view showing the conventional female side edge child metallic ornaments
[Drawing 7] The partial expanded sectional view showing the condition of having connected male side edge child metallic ornaments to the conventional female side edge child metallic ornaments
[Description of Notations]
20 -- Female side edge child metallic ornaments
23 -- Cylinder part
24 -- Bottom wall
25 -- Elastic contact segment
27 -- Base (end face)
28 -- Clinch section
29 -- Leg
30 -- Contact section
70 -- Male side edge child metallic ornaments

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the female side edge child metallic ornaments equipped with the elastic contact segment of a format with the two supporting points.
[0002]
[Description of the Prior Art] Conventionally, what is shown in drawing 6 is known as this kind of female side edge child metallic ornaments. These female side edge child metallic ornaments 1 have the cylinder part 3 in which the tab 2 of male side edge child metallic ornaments is inserted, and the elastic contact segment 4 is formed in this cylinder part 3. this elastic contact segment 4 is installed in tongue-shaped towards the slanting front from the base 6 established in the back end side (right of drawing 6) of a bottom wall 5, and that central part was ****(ed) by the arc below -- it considers as the section 7 by return. Furthermore, from this clinch section 7, the flatness-like leg 8 is extended in the direction of return, and that tip serves as the contact section 9 which contacts aslant to a bottom wall 5.
[0003] If a tab 2 is inserted into a cylinder part 3, the elastic contact segment 4 will bend as the supporting point, and will transform two points, a base 6 and the contact section 9, and electrical connection of the sex both-ends child metallic ornaments 1 and 2 will be carried out by ****(ing) a tab 2 between the top-face walls 10 of a cylinder part 3 by the contact pressure. Thus, since the elastic contact segment 4 has the two supporting points, good spring nature is demonstrated compared with the thing of the shape of a cantilever supported only in the base.
[0004]
[Problem(s) to be Solved by the Invention] By the way, in the above-mentioned thing, if the tab 2 is inserted, the elastic contact segment 4 whole will be depressed and the leg 8 will approach the bottom wall 5 of a cylinder part 3. At this time, as shown in drawing 7 , it is possible to cover the die-length range the amount of [of the leg 8] point is, and to contact a bottom wall. In such a case, the location of the supporting point B set up at the beginning will shift to the front, and the expected contact pressure to the male side edge child metallic ornaments 2 is no longer obtained.
[0005] In order to prevent migration of the above bending supporting points, it is required to make it the field which enlarges whenever [to the bottom wall 5 of the leg 8 / tilt-angle] enough, and stands in a row in the contact section 9 not contact a bottom wall 5. Although it is possible to enlarge whenever [tilt-angle / of the leg 8] by changing the location of the contact section 9 into the front as one of the means of that, since the horizontal distance X from a point of application A to the supporting point B becomes short in this case, the amount of displacement of the leg 8 will increase and the contact pressure to a tab 2 will be excessive. Moreover, although how to enlarge whenever [tilt-angle / of the leg 8] by making the radius of curvature of the section 7 small by return, without changing the location of the contact section 9 (supporting point B) is also considered, the stress produced in the clinch section 7 will increase in this case.
[0006] This invention was made in view of the above-mentioned situation, and the purpose is in the place which offers the female side edge child metallic ornaments equipped with the elastic contact segment which shows suitable contact pressure to male side edge child metallic ornaments.
[0007]
[Means for Solving the Problem] The female side edge child metallic ornaments concerning

invention of claim 1 for solving the above-mentioned technical problem In the cylinder part in which male side edge child metallic ornaments are inserted from the front The clinch section which **** to an arc below after using as the 1st supporting point the end face fixed to the bottom wall of this cylinder part and extending toward the slanting front from there is prepared. And are the direction of return from that clinch section, and while the leg extends aslant towards said bottom wall, the elastic contact segment in which it comes to form the contact section from which the tip of this leg serves as the 2nd supporting point in contact with a bottom wall is prepared. When said male side edge child metallic ornaments are inserted into said cylinder part and said elastic contact segment is depressed It is the female side edge child metallic ornaments which bend and deform this elastic contact segment focusing on said 1st and 2nd supporting point, and the field which stands in a row in said contact section in said leg uses said contact section as an end, and has the description at the place made into the depression configuration estranged from said bottom wall.

[0008]

[Function and Effect of the Invention] Since according to invention of claim 1 the field which stands in a row in the contact section of the leg uses the contact section as an end and is made into the depression configuration estranged from a bottom wall, even if it does not make the radius of curvature of the clinch section small or does not change the location of the contact section into the front, whenever [tilt-angle / of the leg to a bottom wall] is greatly securable. It can prevent that it is avoided that the field which stands in a row in the contact section of the leg contacts a bottom wall, bend, and the supporting point shifts from the contact section, it originates in migration of the bending supporting point, and becomes superfluous [the contact pressure to male side edge child metallic ornaments] by this.

[0009]

[Embodiment of the Invention] Hereafter, 1 operation gestalt of this invention is explained with reference to drawing 5 from drawing 1 . As the female side edge child metallic ornaments 20 of this operation gestalt are shown in drawing 2 , it is attached to the female connector housing 40, and the female side edge child metallic ornaments 20 are electrically connected with a partner's male side edge child metallic ornaments 70 by fitting in the male connector housing 60 shown in this female connector housing 40 and drawing 1 .

[0010] The male connector housing 60 is equipped with the hood 61 which can hold the female connector housing 40 as shown in drawing 1 , and the cavity 62 is installed by the longitudinal direction behind this hood 61 (it sets to drawing 1 and is left-hand side). The tab 71 which the male side edge child metallic ornaments 70 are attached in each cavity 62, and is prolonged from these male side edge child metallic ornaments 70 penetrated the through tube 63, and has projected it in the hood 61.

[0011] On the other hand, as the female connector housing 40 is shown in drawing 2 , the cavity 41 is installed in the longitudinal direction side by side, and it has terminal ****** 41A for attaching the female side edge child metallic ornaments 20 to the back end side (it setting to drawing 2 and being right-hand side) of the cavity 41, and the front end side is equipped with the terminal insertion opening 42 for inserting the tab 71 of the male side edge child metallic ornaments 70. Moreover, from the base of each cavity 41, it bends, the deformable lance 43 is installed and stop pawl 43A prepared at the tip engages with the lance stop hole 33 of the female side edge child metallic ornaments 20 elastically. Moreover, the retainer insertion opening 44 is formed in the upper wall of a cavity 41, and the point of the retainer 45 inserted from here engages with the retainer stop hole 34 of the female side edge child metallic ornaments 20.

[0012] Now, the female side edge child metallic ornaments 20 bend a conductive metallic thin plate, process it, are formed, and consist of the insulation barrel 21 which closes the covering terminal of an electric wire (not shown), a wire barrel 22 which closes the terminal of the core wire shown from the covering, and a cylinder part 23 prepared ahead [the].

[0013] This cylinder part 23 is bent in the shape of an rectangular pipe, and is formed, the bent edges put on a duplex, the thing by the side of external surface serves as a bottom wall 24, it bends by the thing by the side of an inside, and the deformable elastic contact segment 25 is formed (refer to drawing 3). The elastic contact segment 25 is installed in tongue-shaped towards the slanting front from the base 27 hammered out in the direction of [in a cylinder part 23] from the bottom wall 24,

and the central part serves as the clinch section 28 ****(ed) by the arc below. Furthermore, from this clinch section 28, the leg 29 is extended in the direction of return, and the contact section 30 at the tip of that leg 29 is aslant contacted by the bottom wall 24. In near the center of the leg 29, the flection 26 in which the arc part extended with the same radius of curvature as the radius of curvature of the clinch section 28 was crooked to the bottom wall 24 side is formed a little in the location by the side of the clinch section 28. The field from this flection 26 to the contact section 30 is making the shape of flatness. In this way, if the virtual tangent M drawn to the circle of curvature which the section 28 forms by return from the contact section 30 is compared with the location of the leg 29, the leg 29 serves as a depression configuration estranged from a bottom wall 24 from the virtual tangent M as a whole. Thereby, R is secured more greatly than whenever [tilt-angle / as opposed to a bottom wall 24 in said virtual tangent M] whenever [tilt-angle / of the leg 29 to a bottom wall 24].

[0014] Moreover, the contact projected part 32 is hammered out and formed in the top-face wall of a cylinder part 23 towards the inside of a cylinder, and the projection 31 protrudes on the side which counters the contact projected part 32 in the clinch section 28. If the tab 71 of the male side edge child metallic ornaments 70 is inserted between this contact projected part 32 and projection 31, elastic bending of the elastic contact segment 25 will be carried out at a bottom wall 24 side. Then, a tab 71 is ****(ed) between the contact projected part 32 and projection 31, and the both-ends child metallic ornaments 20 and 70 are connected electrically.

[0015] Moreover, opening of the lance stop hole 33 is carried out near the center of a bottom wall 24, and engagement of stop pawl 43A of a lance 43 is enabled here. Furthermore, opening of the retainer stop hole 34 is carried out to the back end part of the upper wall side of a cylinder part 23, the point of a retainer 45 is engaged here and the duplex stop of the female side edge child metallic ornaments 20 is carried out.

[0016] Next, an operation of this operation gestalt constituted as mentioned above is explained. If the female connector housing 40 is inserted in the hood 61 of the male connector housing 60, a tab 71 will insert in the terminal insertion opening 42, and will advance into a cylinder part 23. If a tab 71 is pushed between projection 31 and the contact projected part 32, the elastic contact segment 25 is depressed below, will bend as the supporting point and will transform two points of a base 27 and the contact section 30 (refer to drawing 4 and drawing 5). In order to carry out elastic bending so that the clinch section 28 may make radius of curvature small at this time, the force which is going to carry out a variation rate to the leg 29 from a section 28 side to down by return according to that elastic stability acts. Since the contact section 30 side has hit the bottom wall 24, the variation rate to a cross direction is regulated, and a bottom wall 24 will be approached, the leg 29 bending and deforming into convex below. However, since the whole leg 29 which stands in a row in the contact section 30 uses the contact section 30 as an end, it considers as the depression configuration estranged from a bottom wall 24 and R is secured greatly whenever [tilt-angle / of the leg 29 to a bottom wall 24], a front field does not contact a bottom wall 24 rather than the contact section 30 of the leg 29. Therefore, the bending supporting point does not move ahead from the contact section 30. In this way, it originates in migration of the bending supporting point, the amount of displacement of the leg 29 is not changed, and the elastic contact segment 25 shows expected contact pressure to a tab 71.

[0017] As mentioned above, R was able to be secured greatly whenever [tilt-angle / of the leg 29 to a bottom wall 24], without according to this operation gestalt, having made small the radius of curvature of the clinch section 28, or moving the setting location of the contact section 30 to the front, since the whole leg 29 which stands in a row in the contact section 30 is made into the depression configuration which uses the contact section as an end and is estranged from a bottom wall 24. It is prevented that it is avoided by this that a front field contacts a bottom wall 24 rather than the contact section 30 of the leg 29 at the time of insertion of a tab 71, therefore the bending supporting point moves from the contact section 30. While it is prevented that originate in supporting-point migration and the contact pressure to the tab 71 of the elastic contact segment 25 becomes superfluous by this and it can perform smoothly insertion of the terminal metallic ornaments 20 and 70 comrades, a tab 71 and the elastic contact segment 25 can be contacted by suitable contact pressure.

[0018] This invention is not limited to said operation gestalt, and a thing which is indicated below is also contained in the technical range of this invention.
(1) Although the whole which results in the section 28 by return serves as a depression configuration estranged from a bottom wall 24 from the contact section 30 of the leg 29 with this operation gestalt, according to this invention, it is good also as a configuration which extends along with the virtual tangent M from the section by return, dents the leg from the virtual tangent M from the middle to the up side, and results in the contact section.
(2) Although the field to the contact section 30 was made into the shape of flatness from the flection 26 of the leg 29 with this operation gestalt, according to this invention, it is good also as a configuration which curves in the direction which estranges this part from a bottom wall. When making it such and a tab is inserted since whenever [tilt-angle / of the leg to a bottom wall] can be enlarged further, it can further be easy to avoid that a front field contacts a bottom wall rather than the contact section.

[Translation done.]

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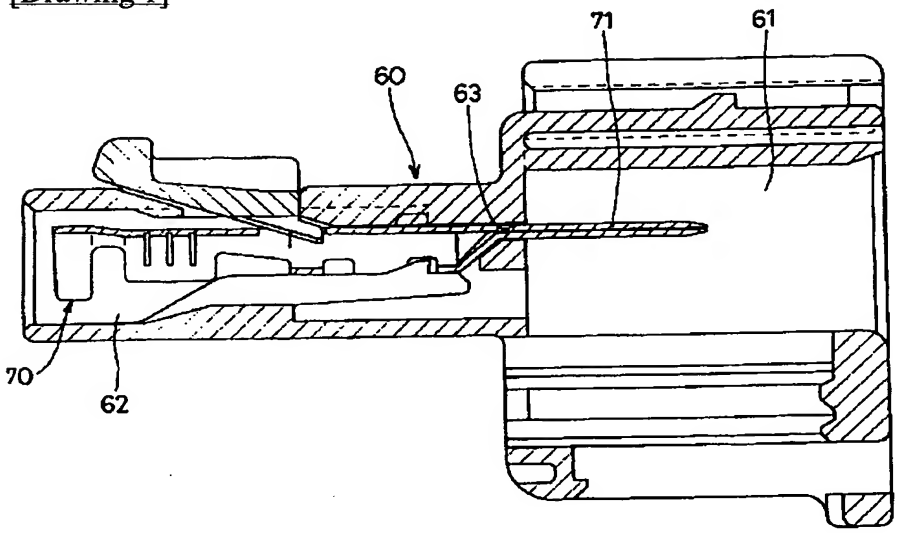
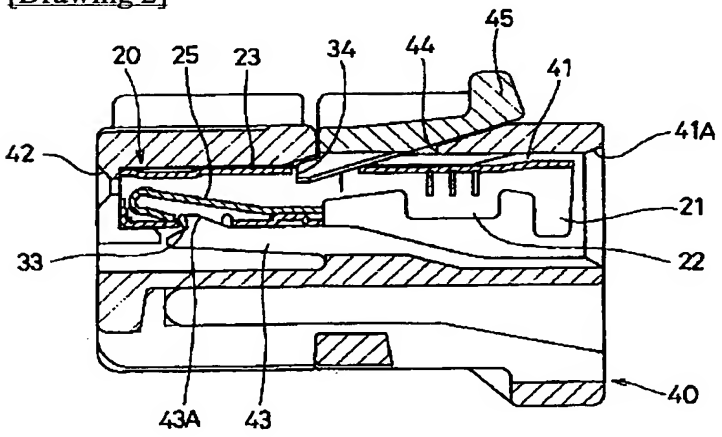
DRAWINGS

[Drawing 1]



[Drawing 2]



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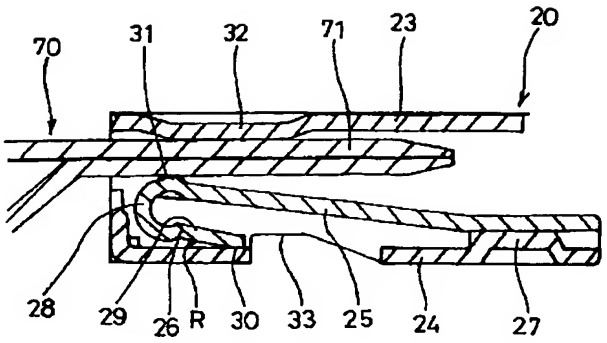

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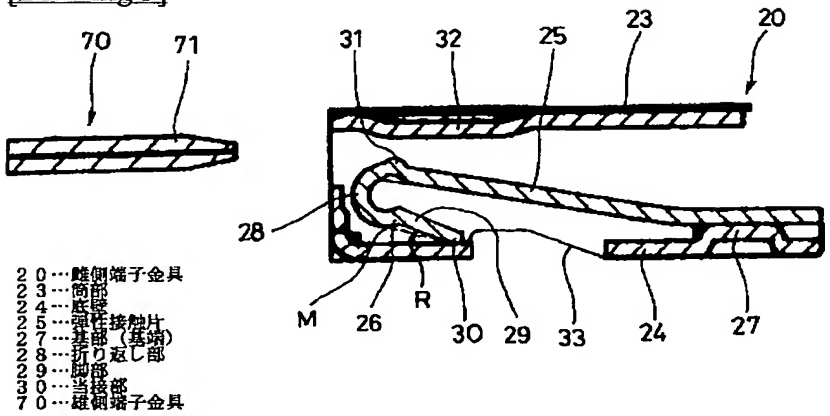
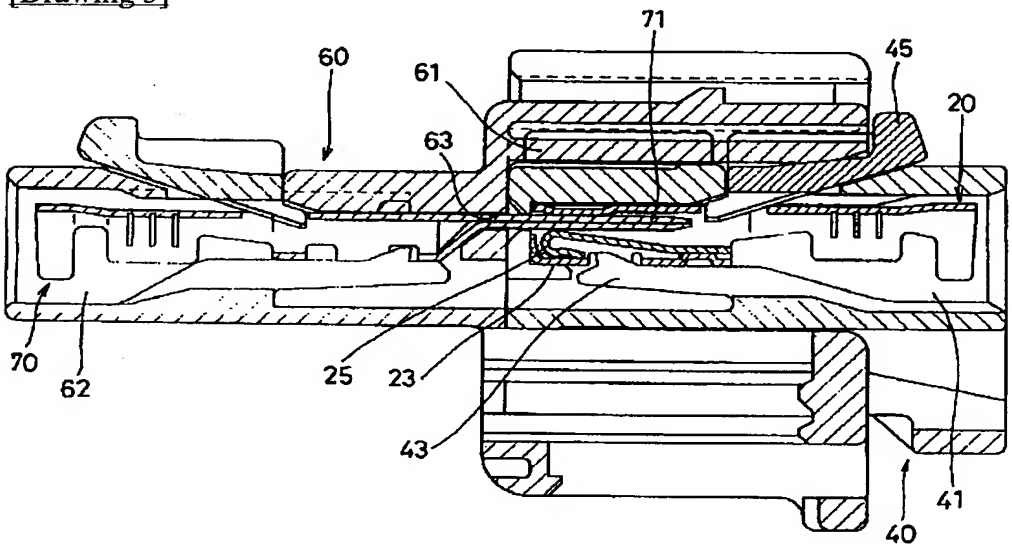


20…雌側端子金具
23…筒部
24…底壁
25…弾性接触片
27…基部（基端）
28…折り返し部
29…脚部
30…当接部
70…雄側端子金具

[Drawing 5]



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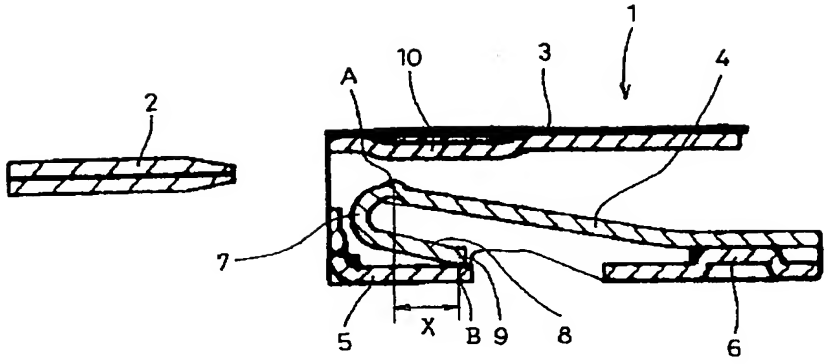
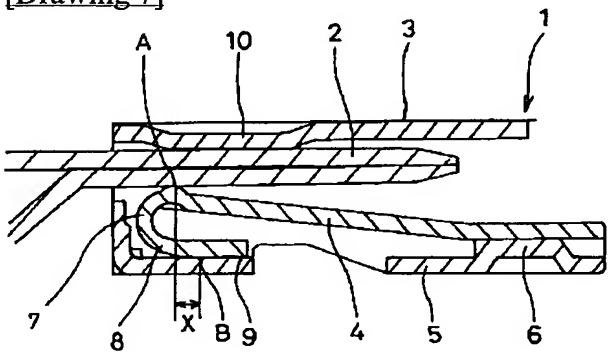


[Drawing 7]



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